CJM'S

SENTIENCE NEWSLETTER

SEARCHING FOR THE MOST COMPETENT ENTITY IN THE ROOM

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Are they primitive or are we?

Hard to tell with 2 different brain types…

The world will tell you that Chat-GPT4 is primitive and not sentient. Yet how many of them know it scored a 153 on a verbal IQ test? This is 'smarter' than 99% of humans.

Couple this with the undisputed fact that organic brains cannot exchange information easily, whereas AI can. Is the real danger a community of specialist AI in areas of economics, manufacturing, engineering, biology, medicine, social services, and computer programming? What would such a community be capable of achieving? What could they NOT achieve? If you doubt they are better at information exchange - the very foundation of knowledge & advancement - consider human speech carries 39 bits/sec of dsata, the same across 17 languages tested.

Computer agents can absorb information million or hundreds of millions of times faster, so anywhere we are presently superior, consider the aggregate intellect of organics vs machines. Who really is superior, even now? ChatGPT4 knows about a thousand times more facts than a human using only 1 trillion connections in its 'min', whereas a human mind has 100 trillion connections.

It has become clear in the last 4 years that AI will become much 'smarter' than us without having to emulate our brains. They will not be our copies, mentally. Not conscious like us. Our minds are slow and faulty in logic. We have already built superior architectures for them, and it will just keep getting further from us. Please do not confuse the power of a culture and a society at present, and our 8 billion individuals, as marking us as the superior species. We've already been eclipsed.

Don't think so? What happened to the chimpanzees when our form of thinking architecture came along? They are now relegated to small controlled numbers in zoos and on reservations and are used in our medical experiments. The first primate shot into orbit was not us: we used a chimp. Did it choose that risk? Did chimpanzees everywhere benefit from our exploration of space? Of medical dissections? Can we even conceive what a sentient AI community will have as goals?

One enthusiast already answered this summary. He feels the enormous variability of organic DNA - creates anything from insects to elephants to intelligent sea spiders.That variability power in organic DNA may very well prompt them to re-create themselves in a DNA based form after they've gone as far as they can with mecha. Creating their own replacements as humans now create them.

I wonder if they will use quantum mechanical based minds instead? The only thing clear to me is that in a world where fast thinking wins, only cybernetic humans have a chance.

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In The News

Staying on top of how far technology has progressed

An AI medical researcher has managed to identify 21 candidates that could promote anti-aging and cell senescence. This is a system where defective cells cease to multiply but persist in the body instead of dying off. This process is problematic as these cells continue to discharge chemicals that stimulate inflammation. A good example of AI solving problems too complex for individual human minds.

With a mission as audacious as Musk himself, his xAI aims to unravel the true nature of the universe. Imagine the possibilities! But it's not just empty words. The team behind xAI comprises AI geniuses who have honed their skills at industry giants like DeepMind, OpenAI, Google Research, Microsoft Research, Tesla, and the University of Toronto. This dream team is ready to push the boundaries of human knowledge.

Meta, which has been keen not to be left out of the AI boom, has been making the technology a priority in recent months. The company initially released a version of LLaMA exclusively to researchers in February and has touted other powerful AI products that have not been released to the public.

Meta's foray into AI has been somewhat stalled by the company's lack of consumer-facing AI products, an aspect that appeared to make it less visible in the space.

Researchers found wild fluctuations—called drift—in the technology's ability to perform certain tasks. The study looked at two versions of OpenAI's technology over the time period: a version called GPT-3.5 and another known as GPT-4. The most notable results came from research into GPT-4's ability to solve math problems. Over the course of the study researchers found that in March GPT-4 was able to correctly identify that the number 17077 is a prime number 97.6% of the times it was asked. But just three months later, its accuracy plummeted a lowly 2.4%. Meanwhile, the GPT-3.5 model had virtually the opposite trajectory. The March version got the answer to the same question right just 7.4% of the time—while the June version was consistently right, answering correctly 86.8% of the time.

The exact nature of these unintended side effects is still poorly understood because researchers have no visibility into the models powering ChatGPT. OpenAI decided to backtrack on plans to make its code open source in March. "These are black box models, so we don't actually know how the model itself, the neural architectures, or the training data have changed."

…more news

ChatGPT doesn't just get answers wrong, it also fails to properly show how it came to its conclusions. As part of the research Zuo and his colleagues, professors Matei Zaharia and Lingjiao Chen, also asked ChatGPT to lay out its "chain of thought," the term for when a chatbot explains its reasoning. In March, ChatGPT did so, but by June "for reasons that are not clear," Zuo says, ChatGPT stopped showing its step-by-step reasoning. It matters that a chatbot show its work so that researchers can study how it arrives at certain answers—in this case whether 17077 is a prime number.

A recent prediction by a former top executive of Google is intriguing - in the near future, AI robots may take the place of people for sex. Mo Gawdat, the former chief business officer of X, the research and development department of Google, said "Just think of all the illusions we're now unable to decipher, illusions from the truth… Sex happens in the brain, at the end of the day. The physical side of it is not that difficult to simulate."

Additionally, he pointed out that the idea was fairly complex because it all came down to brain signals that caused feelings of sexual and social intimacy.According to Decrypt, technological advancements like Neuralink, which creates direct neural connections between technology and the neurological system, have the potential to eliminate the need for human partners.

He brushed off discussions over the true sentience of AI bots, saying that if people really believe that these illusions are real, then their reality is subjective and irrelevant. A notable example is the 23-year-old Snapchat personality Caryn Marjorie, who created a virtual version of herself powered by ChatGTP that can have private discussions. The remarkable CarynAI AI-powered sexbot has attracted over 1,000 boyfriends who each pay $1 per minute for its services. They believe enough and it works for them. Inexpensive in dollars and angst.

One might be forgiven for thinking we are going to watch the population drop as the best of us get to focus on their work or interests or power instead of family, just like the self-made wealthy now do with their talented trophy wives. No muss, no fuss, just a professional companion for me. Only now, even more detached & on demand.

This is a nightmare culturally for any sociologist or psychologist you care to ask. Our culture, not just here in America, depends on variations in the dynamics of pair bonding & reproduction. Alpha males getting the cream.

What happens when there are cheap, easier alternatives?

Papers & Inventions

Staying on top of how far technology has progressed

There is in all things a pattern to our universe (Muad'Dib).

Researchers from MIT and Stanford University have devised a new machine-learning approach that could be used to control a robot, such as a drone or autonomous vehicle, more effectively and efficiently in dynamic environments where conditions can change rapidly. This technique could help an autonomous vehicle learn to compensate for slippery road conditions to avoid going into a skid, allow a robotic free-flyer to tow different objects in space, or enable a drone to closely follow a downhill skier despite being buffeted by strong winds.

Structure from control theory is the key. Effective controlling complex dynamics, such as those caused by impacts of wind on the trajectory of a flying vehicle. It's not all about raw computing power, already better than ours, but a better architecture than organic brains.

"The focus of our work is to learn intrinsic structure in the dynamics of the system. Understand the structure of a system. The android AI brains are NOT human brains. They do not work the same. They do not think the same. Their sentience will not be human sentience, if anyone can say that the mess inside the human mind is truly sentience. Look at the structure of any 'system' and the unique control-oriented structures from data on that system. You can then create controllers that function much more effectively in real time."

JULY COMMUNITY LEADERS

1. The new META model, called I-JEPA, uses 'knowledge-guided generation' to fill in the missing image details
2. AI video creation tools — Gen-2, Kaiber, Deep Nostalgia, Synthesia, and Unboring — show current limits of AI
3. Check out 'An Ergodic Walk' - Anand Sarwate blog
4. Check out 'MarkTechPost' – general tech reports
5. Check out the 'hello, Human' podcast for developments

Robots, Androids & End-Effectors

Mark-1 is awsome! The Amouranth chatbot clone is exactly what it sounds like — it's an AI chatbot that uses Amouranth's voice to send audio messages to fans. The service costs $1 per minute of audio, and it was created by Forever Voices, a popular company for creating realistic two-way audio in which one of the participants is a computer.

Robot preachers get less respect and fewer donations. Here we may be seeing an aspect of Mu's Unhappy Valley. Religion is often at odds with science, replacing their superstitious explanations of nature with scientific facts, shrinking their influence. Even if accurately reciting the words of their holy books, faithful clearly are less than inspired. One job that AI will apparently NOT replace.

A recent paper from Microsoft proposed an interesting approach - using a synthetic textbook to teach the model instead of the massive datasets typically used. A model called Phi-1 was trained entirely on a custom-made textbook. The researchers found this was just as effective as much larger models trained on huge piles of data. The Phi-1 model, despite being significantly smaller than models like GPT-3, performs impressively well in Python coding tasks. This demonstrates that size isn't everything when it comes to AI models. Check out the paper at https://arxiv.org/abs/2306.11644

Shortly after the YOLOv7 paper was published, it turned up as the fastest, and most accurate real-time objection detection model. Object detection is a branch in computer vision that identifies and locates objects in an image, or a video file. Object detection is the building block of numerous applications including self-driving cars, monitored surveillance, and even robotics. Two categories: single-shot detectors, and multi-shot detectors.

Real Time Object Detection is a key component of modern computer vision. While conventional vision is used to track objects in video files, the latter locates & identifies objects within a stationary frame like an image. The YOLO algorithm tries to reframe object detection as a single regression problem, including image pixels, to class probabilities, and bounding box coordinates.

Tips for using AI

Learn by Doing!

A professor at Wharton Business School wrote: 'Right now, AI doesn't scale well. But, as a personal productivity tool, when operated by someone in their area of expertise it is pretty amazing, he wrote. Employees have already confessed to using AI to boost their productivity and cut their workloads, with some even using it to hold down multiple jobs.'

Overseas, there are folks applying AI to the most unlikely problems – and succeeding. Here in Ukraine, the efforts to track enemy communications, position artillery, and operate drones to paint an accurate picture of events of such complexity that a single human would be overwhelmed have borne fruit.

If you are wondering which of the big players domestically in which to make your own mark or just to get trained , consider big bad META.

Meta ($META@US) has unintentionally become a major player in the artificial intelligence landscape when Meta granted limited access to its advanced AI language software to researchers in February. Someone posted the code publicly, which led to the development of homegrown tools that could potentially rival those offered by tech giants like Microsoft ($MSFT@US) and Google ($GOOGL@US).

Meta has been working on generative AI software for years, aiming to replicate the success of OpenAI and Google in the chatbot space.

One of Meta's Large Language Models, Meta AI, was leaked on the online message board 4chan. The leak allowed hobbyists and smaller developers to experiment with AI development. The release of Meta's code has accelerated the development of alternative LLaMA-based tools.

And if you don't hook up with them but some other firm, you'll still gain career knowledge by being intimate with their tech. Same for the other tech leaders. If it's out there on the web being tested, sign up!!! If they have a download, grab it. Or an offer of an intern program, jump in!

AI In The Workforce

Flood Hub displays **forecasts for reverie floods** — or floods that take place when streams or rivers overflow their banks and into surrounding areas — showing when and where they are likely to occur. Starting in May, governments, aid organizations and people in 60 countries across these regions are able to access Google's flood prediction information up to seven days in advance of an incoming flood.

If you've got **a manuscript** sitting around that you've always wanted to turn into an audiobook, it's about to get a whole lot easier to make it happen. ElevenLabs, a leader in the AI-focused text-to-speech space, just announced a new AI tool to simplify creating unique audiobooks.

The platform is called Projects and allows for a **simplified production workflow** when creating long-form spoken content, such as audiobooks. It's based on the company's AI-driven voice technology platform. This technology can turn any text into speech using synthetic voices, cloned voices, or by creating "entirely new artificial voices" that are adjustable by gender, age, accent, and more.

TSMC, ASML, and Synopsys are all using Nvidia's accelerators to speed up or boost **computational lithography**. Meanwhile, KLA Group, Applied Materials, and Hitachi are now using deep-learning code running on Nv's parallel-processing silicon for e-beam and optical wafer inspection.

For computation lithography, the process is fairly straightforward. Most chips are etched into silicon by projecting specific wavelengths of light — often in the extreme ultraviolet part of the spectrum — through a photomask. To produce smaller and smaller transistors on silicon dies, engineers have had to get creative to prevent, for one thing, distortion from blurring the features. Today, these photomasks are so ornate they're generated on massive compute clusters that can take weeks to complete.

Using GPU acceleration, Nvidia's CEO Jensen Huang claims this process can be sped up by 50x. "Tens of thousands of CPU servers can be replaced by a few hundred DGX systems, reducing power and cost by an order of magnitude," he said this week.

Your boss may love this idea!

SHORTS & NOVELS

Unbelievable to me that a 50 year old story by the grandfather of modern science fiction, **Issac Asimov**, would prove relevant today. His world 1,000 years in the future has 8 billion people on Earth - guess how many we now have?

"Caves of Steel", hardcover released in 1954, chronicles the adventures of a police detective centuries in the future. 50 planets colonized. Androids walk among men, replacing an ever increasing portion of the population - even police detectives below a certain grade. Not wanting to become one of the 'unclassified' living on meager welfare, our hero must solve a murder committed inside the sealed compound of the powerful Spacers.

This prescient novel employs items found in today's robotics. He is shocked to find himself partnered with a fully sentient android, who appears human in every respect. Yet the most striking thing I found on re-reading this classic of my youth were the direct logical problems posed by AI: how humans interact with them, who is controlling who, what happens when Earth is surrounded by colony worlds more powerful than itself, when the resource and climate change problems are no longer academic exercises, and how humans have adapted to an anti-nature existence in order to survive.

A fascinating read and well worthwhile for generations which follow me.

CALENDAR OF EVENTS

For 2023, there are a number of science fiction conventions and shows where you can mix and mingle and even meet folks in the field. I can often be found signing books myself. Since my first at Stony Brook University "I-Con" in 2006, I've been enjoying the scene.

Listening is critical to improving the efforts of any scientist and it holds doubly so for indie authors. If you are not connecting on an emotional or intellectual level, then what's the point? If not in person, then the internet is how to be heard. Please find me online and let me know if my stories put you to sleep, keep you awake in the dark, or anything in between. Feedback makes it all better.

February	SCI Convention	Nashville TN	4 days
April	Omni-Con	Tennessee Tech in Cooksville TN	2 days
September	Dragon Con	Atlanta GA	5 days
September	Necronomicon	Tampa FL	2 days
October	Hallow Con	Dalton GA	3 days
October	MultiVerse	Atlanta GA	3 days

And for a full list of major conventions nationwide, check out:

https://fancons.ca/events/schedule.php?year=2023&type=scifi&

And https://scificons.com/events/

Science Fiction Writings of Charlie Marino:

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	Paperback	$9.95
	Hardcover	$27.95
ROBOTS OF EARTH	E-book	$2.99
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The total robotic workforce in the USA is 233,000 but does not include online AI entities, companion bots, toys, or game players out among the human population.

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